

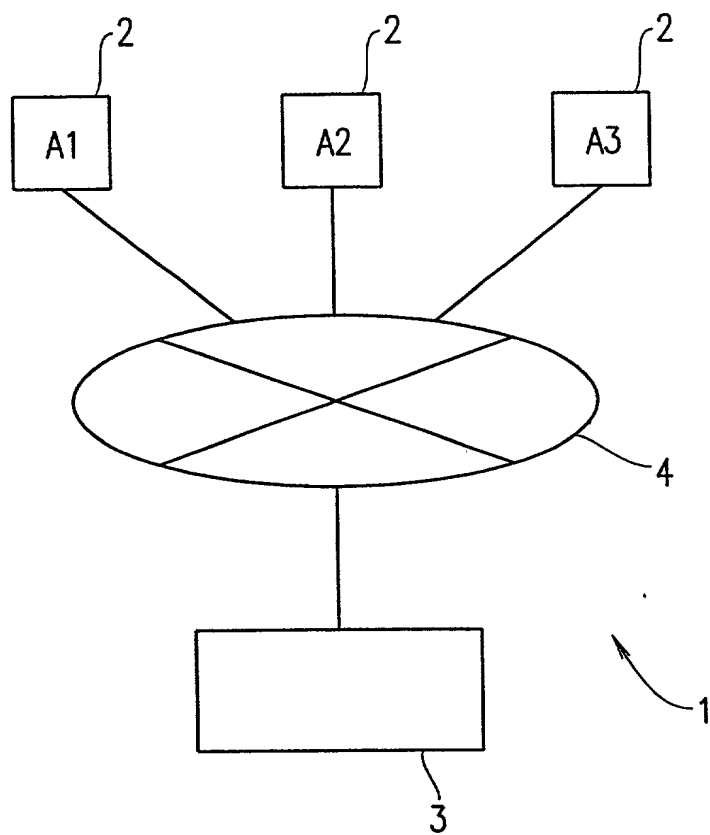
FIG. 1

FIG. 2

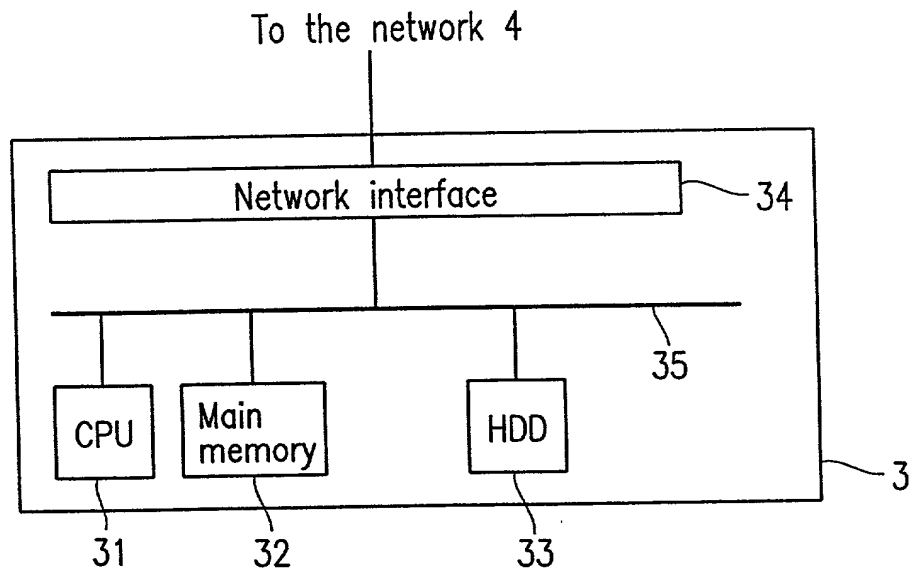


FIG. 3

Shop	Product	Number of products ordered	Record #1
A1	B2	N1	
Shop	Product	Number of products ordered	Record #2
A1	B1	N2	
Shop	Product	Number of products ordered	Record #3
A1	B3	N3	
Shop	Product	Number of products ordered	Record #4
A2	B1	N4	

FIG. 4

(a) ROOT (0)

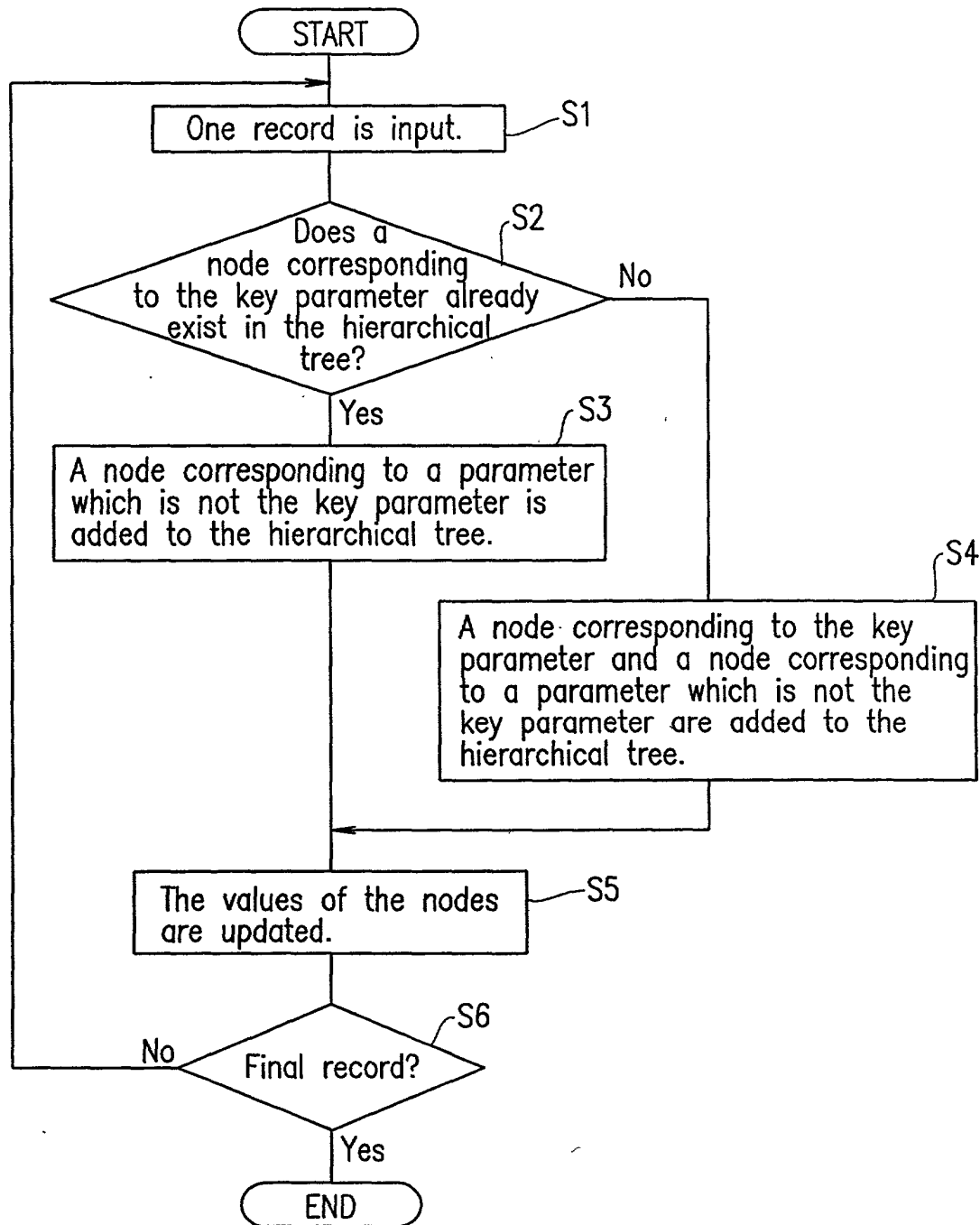
(b) ROOT (N1)
 └─ B2 (N1)
 └─ A1 (N1)

(c) ROOT (N1+N2)
 └─ B1 (N2)
 └─ A1 (N2)
 └─ B2 (N1)
 └─ A1 (N1)

(d) ROOT (N1+N2+N3)
 └─ B1 (N2)
 └─ A1 (N2)
 └─ B2 (N1)
 └─ A1 (N1)
 └─ B3 (N3)
 └─ A1 (N3)

(e) ROOT (N1+N2+N3+N4)
 └─ B1 (N2+N4)
 └─ A1 (N2)
 └─ A2 (N4)
 └─ B2 (N1)
 └─ A1 (N1)
 └─ B3 (N3)
 └─ A1 (N3)

FIG. 5



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FIG. 6

61	62	63	64	65	66	67
1	Node	Level	L Link	C Link	R Link	Value
2	ROOT	0	4	-1	-1	N1+N2+N3+N4
3	B2	1	3	1	6	N1
4	A1	2	-1	2	-1	N1
5	B1	1	5	1	2	N2+N4
6	A1	2	-1	4	8	N2
7	B3	1	7	1	-1	N3
8	A1	2	-1	6	-1	N3
9	A2	2	-1	4	-1	N4

FIG. 7

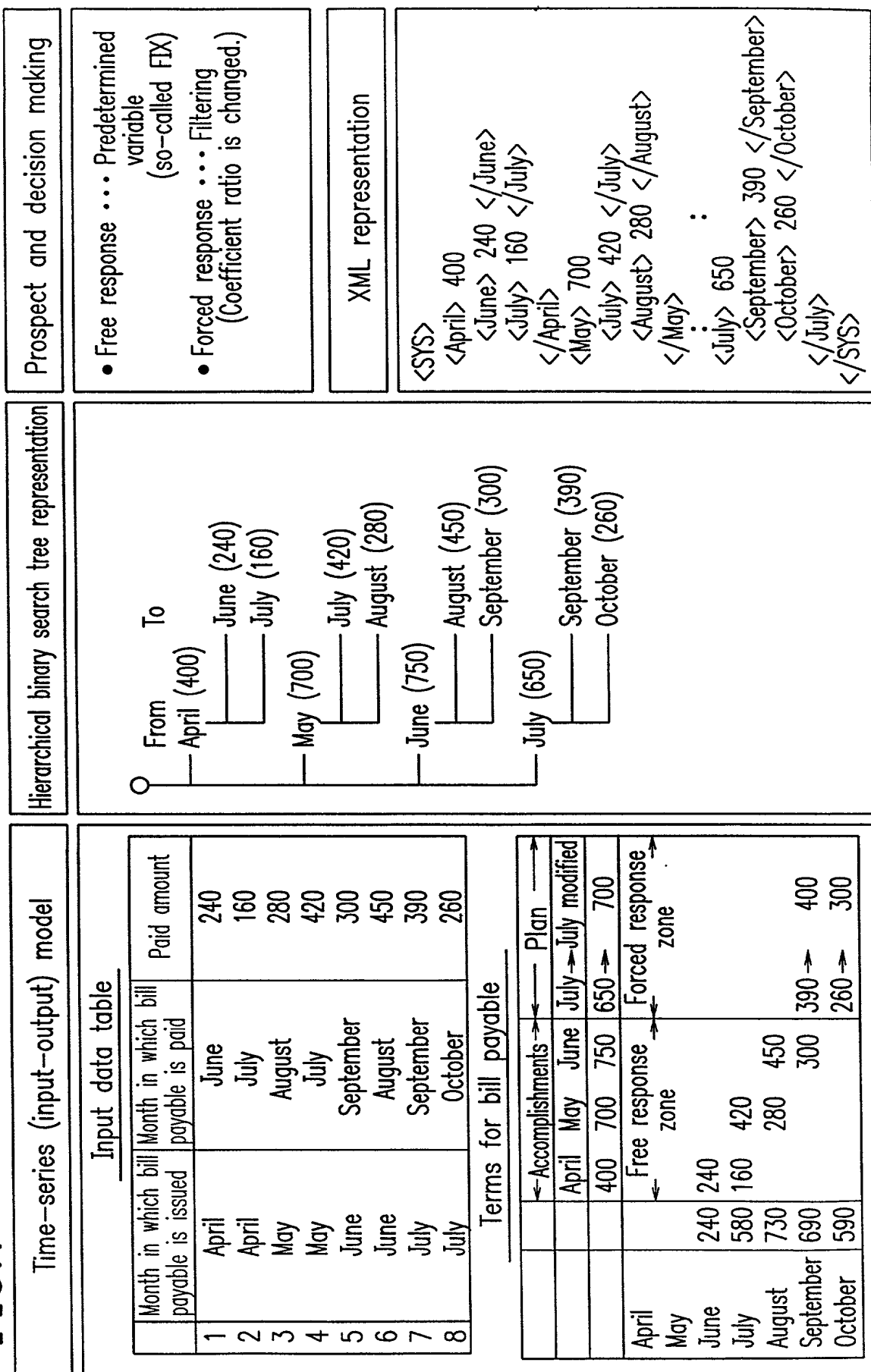


FIG.8

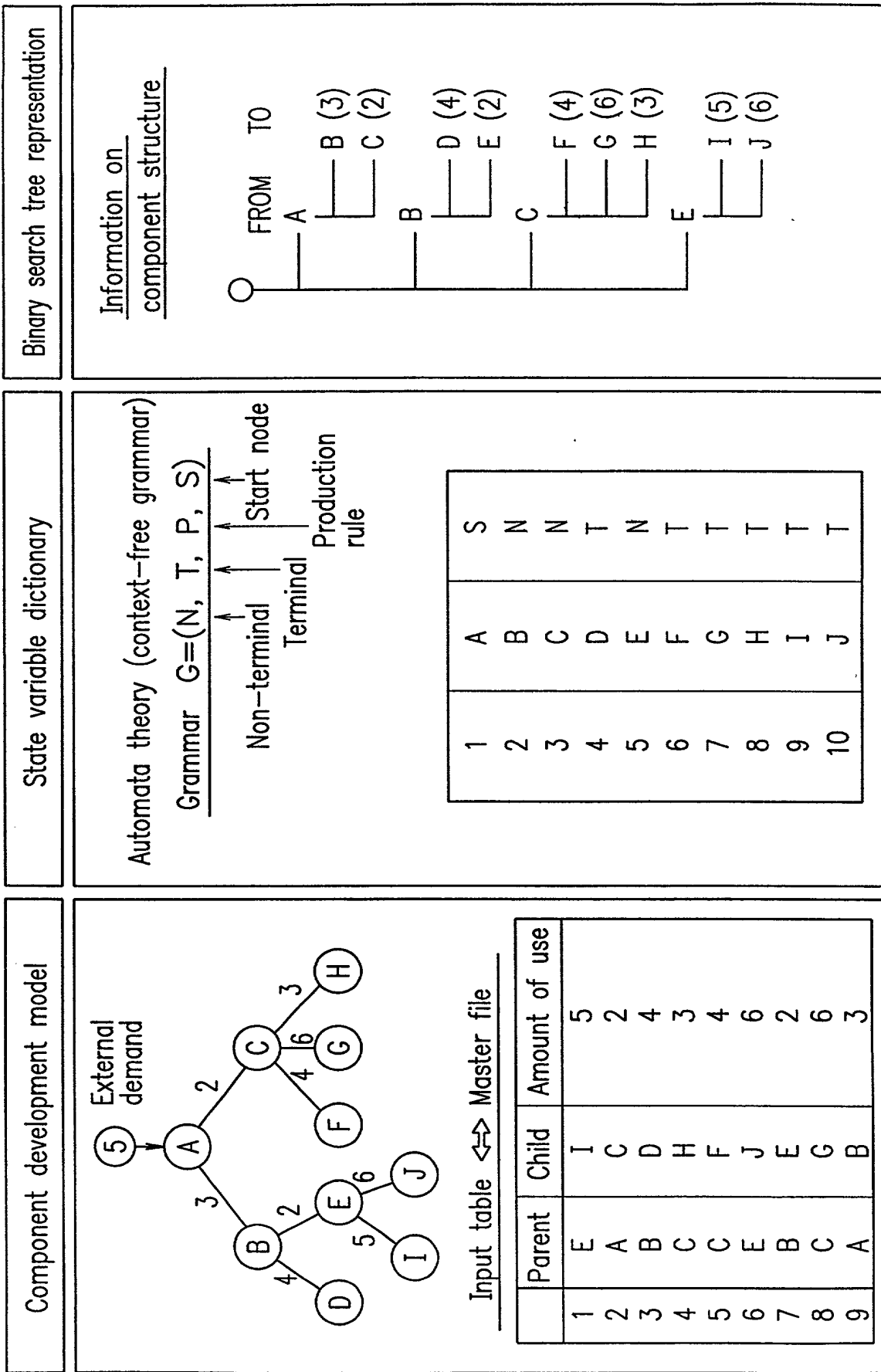


FIG. 9

